FM5500 Sample User Guide for Recommended Configuration
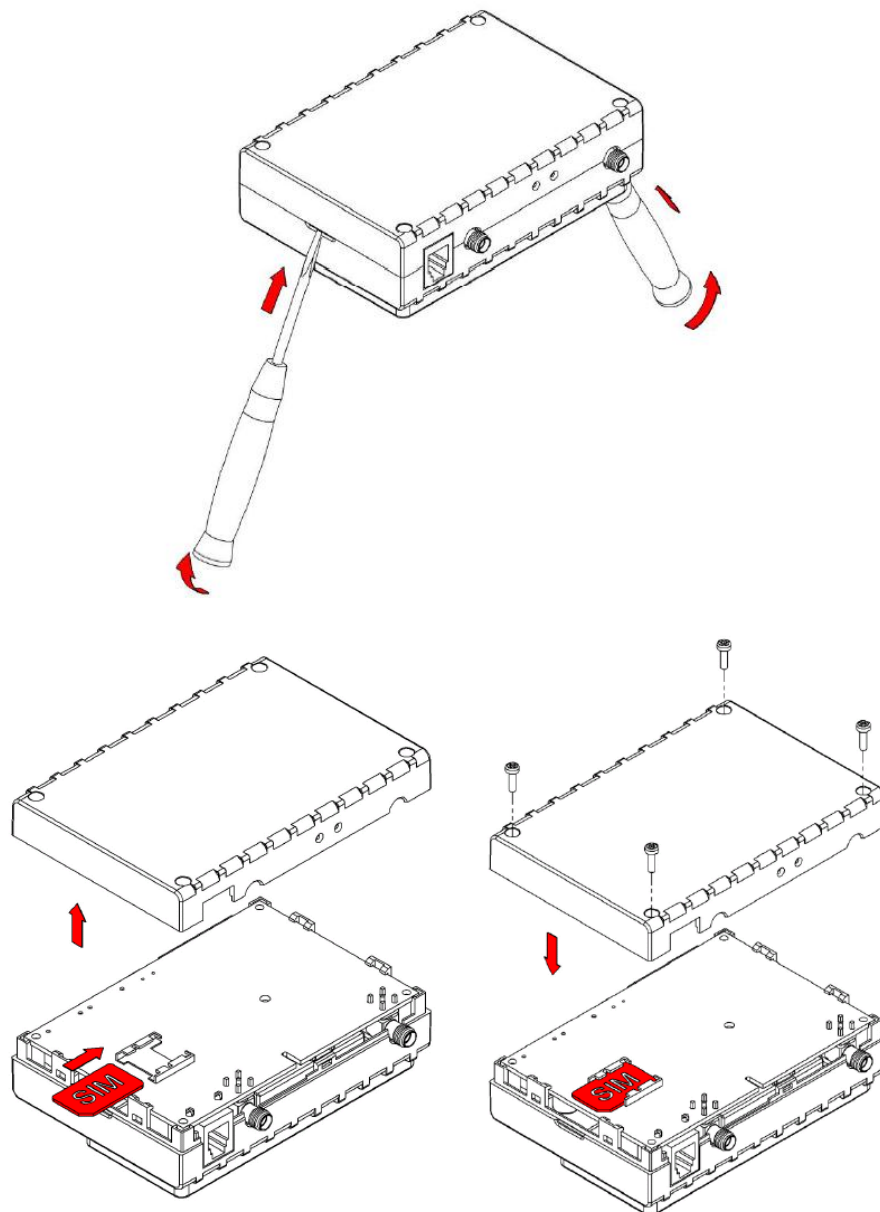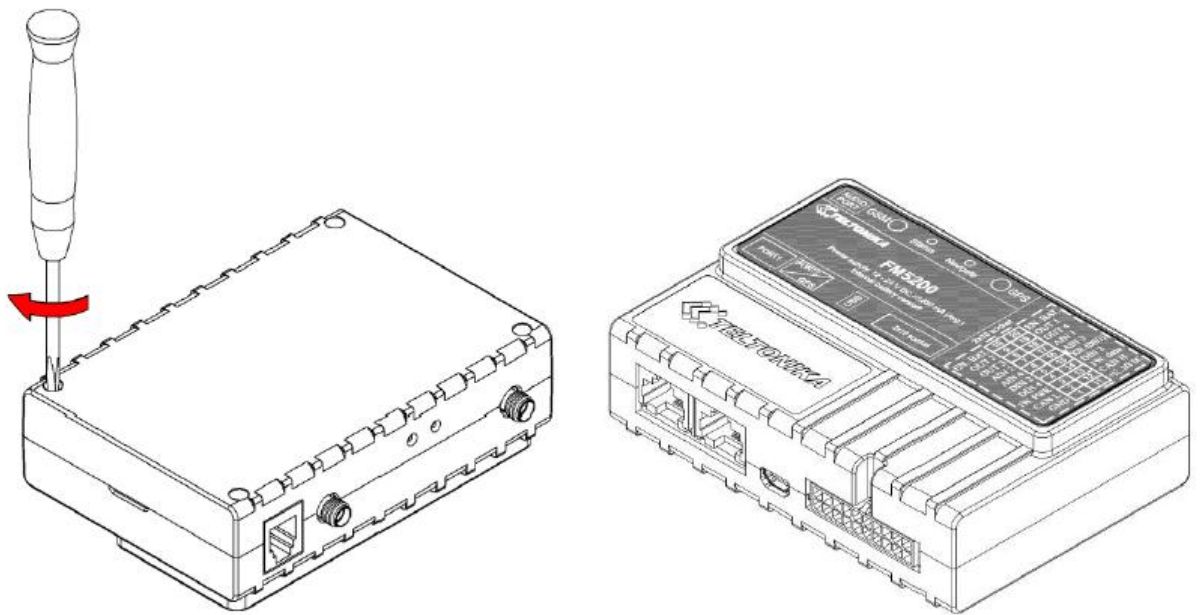
1 About the document

This document contains information required for fast testing of the FM5500 device

1.1 Getting started with FM5500 device

This paragraph contains the information needed to successfully launch and use the FM5500 device. The steps below should be followed carefully to completely test the FM5500.
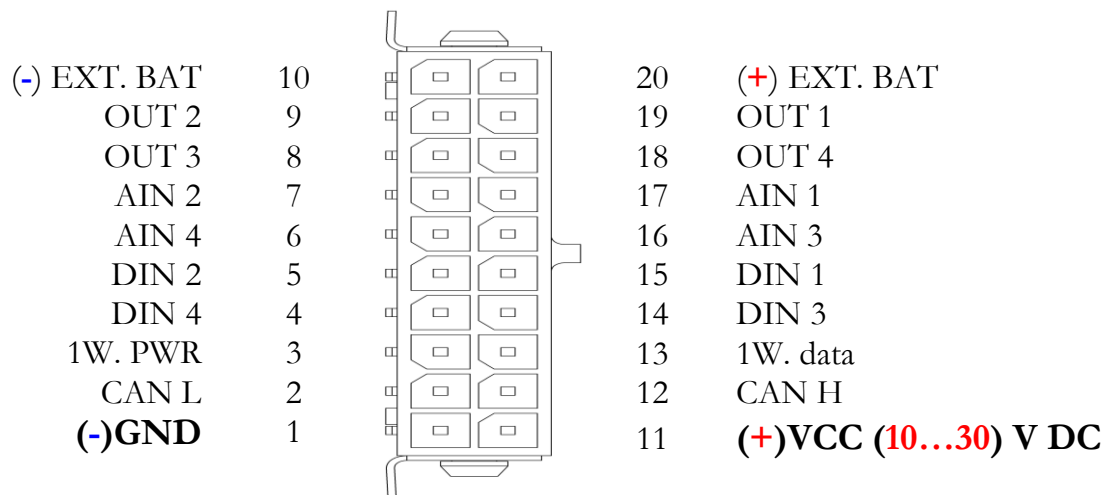
1.2 SIM card insert scheme

Pic. 1. Illustration of how to insert the SIM card

1.3 Power source connection

(-) EXT. BAT	10		20	(+) EXT. BAT
OUT 2	9		19	OUT 1
OUT 3	8		18	OUT 4
AIN 2	7		17	AIN 1
AIN 4	6		16	AIN 3
DIN 2	5		15	DIN 1
DIN 4	4		14	DIN 3
1W. PWR	3		13	1W. data
CAN L	2		12	CAN H
(-)GND	1		11	**(+)VCC (10…30) V DC**

Pic. 2. Standard FM5500 2x10 socket pinout

The external 10...30 V DC (12 W Max) power supply must be used to power up the device. Connect power supply to 1 pin and 11 pin as shown above.

1.4   Placement of GPS antenna

- GPS antenna must be placed so its state is as horizontal as possible (if antenna is leaning more than 30 degrees, it is considered incorrect mounting).

- GPS antenna cable cannot be bent more than 80 degrees.

- GPS antenna must be placed sticker facing down

Pic. 3. GPS antenna correct mounting

It is recommended to place GPS antenna as close to the window as possible.

NOTE, that most of modern office windows are equipped with filters that could block GPS signal so for best GPS signal quality we recommend to put GPS antenna outside (on windowsill, some plate etc.).

1.5   Installing FM5500 drivers

Software requirements

• Operating system 32-bit and 64-bit: Windows XP with SP3 or later, Windows Vista, Windows 7.

• MS .NET Framework V3.5 or later (http://www.microsoft.com or

http://avl1.teltonika.lt/downloads/tavl/Framework/dotnetfx35setupSP1.zip).

Drivers

Please download Virtual COM Port drivers from Teltonika website:

http://avl1.teltonika.lt/downloads/FM11/vcpdriver_v1.3.1_setup.zip

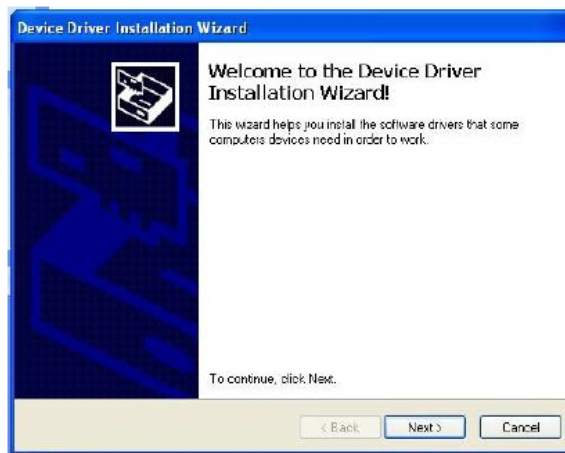**Installing drivers**

Extract and run VCPDriver_V1.3.1_Setup.exe. This driver is used to detect FM5500 device connected to the computer. Click 'Next' in driver installation window (pictures 5-7):
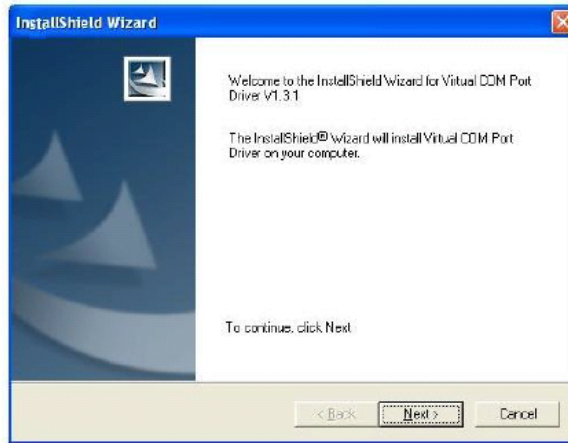
Pic. 4. Driver installation window

This will launch device driver installation wizard. In the following window click 'Next' button again:

Pic. 5. Driver installation window

Setup will continue installing drivers and will display a window about successful process in the end. Click 'Finish' to complete setup:

Pic. 6. Driver installation window

You have now installed drivers for FM5500 device successfully.

1.6 Loading the Configuration into the FM5500 Device

FM5500 Configurator must be used to configure the FM5500 device. Configurator can be downloaded from: http://avl1.teltonika.lt/downloads/FM55/ or contact our sales manager to get latest configurator version. The only data client is required to enter to configuration is APN data, domain and target server port.

Pic. 7. Configuration toolbar view

1.6.1 APN configuration

In order to make FM5500 device to be able to connect to local GPRS network (and send AVL data) the following APN data (provided by local GSM services provider) must be entered into FM5500 configuration:

- Access Point Name (APN) with authentication type CHAP or PAP (if required);
- APN login;
- APN password;

If you are not sure what APN settings should be, please contact your GSM operator.

### 1.6.2 Domain and Port configuration

In the domain field you have to enter your server IP address, where to send FM AVL data.

In Target Server Port field you have to enter your server Port number. In recommended configuration mode transfer protocol is set to TCP. But also you can set UDP transfer protocol in advanced configuration.

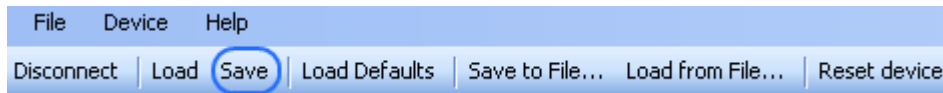### 1.6.3 Saving the Configuration into the FM5500 Device

Follow these steps:

1. Press connect in configurators navigation bar (make sure that your FM5500 is connected to PC and power source).
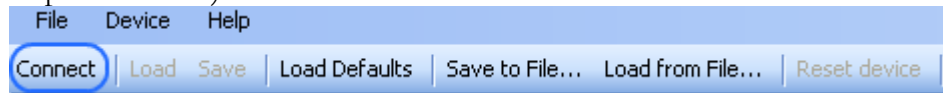
Picture 8. Connecting FM5500 to configurator

2. When device is connected to configurator you can save your configuration by clicking Save.

Picture 9. Saving configuration to FM5500 device

1.6.4 Recommended Configuration

Recommended configuration is based on fast periodic AVL data acquisition mainly according to the change of the object's geographic angle (Min.Angle = 10 degrees). According to this configuration the FM5500 device will generate AVL record every time the object's angle is changed more than 10 degrees. Such AVL data acquisition is rational in cases the object mostly moves in the city. Min.Distance = 100 meters, so the additional AVL record will be generated after driving more than 100 meters in the straight line. If the object with FM5500 device is not moving, the AVL data records are generated periodically every 300 seconds (Min.period = 300 s).

AVL data is sent via GPRS to the server as soon as the AVL data record is generated (Min. saved records = 1; Send period = 10 s). According to this configuration one AVL data record, containing information about the GPS position and Input/Output (I/O) parameters is sent to the server at least every 300 seconds.

Following I/O elements' vales are monitored in every AVL data record:

- DIN1 (as ignition) {values: 0 – Off; 1 – On};
- Power voltage {values: from 10 V to 30 V, according to the power source).
- Odometer {values: what is driven distance between two coordinate's points}

Additional AVL data records called "events" are generated on following parameter value changes:

- If power voltage value falls less than 11 V;

- Ignition is turned ON/OFF (DIN1=1 or DIN1=0).

1.6.5   What is the purpose of testing FM5500 in this scenario?

The main propose of this testing scenario is for the user to see the highly detailed track (as in the sample screenshot below) of his driven track in the city. The user will be able to see his vehicles current position as well as the position in any selected time in the past. The user will be able to see the time and points in the map in which the ignition has been turned ON/OFF, power voltage has become less then 11 V (car battery needs to be recharged).
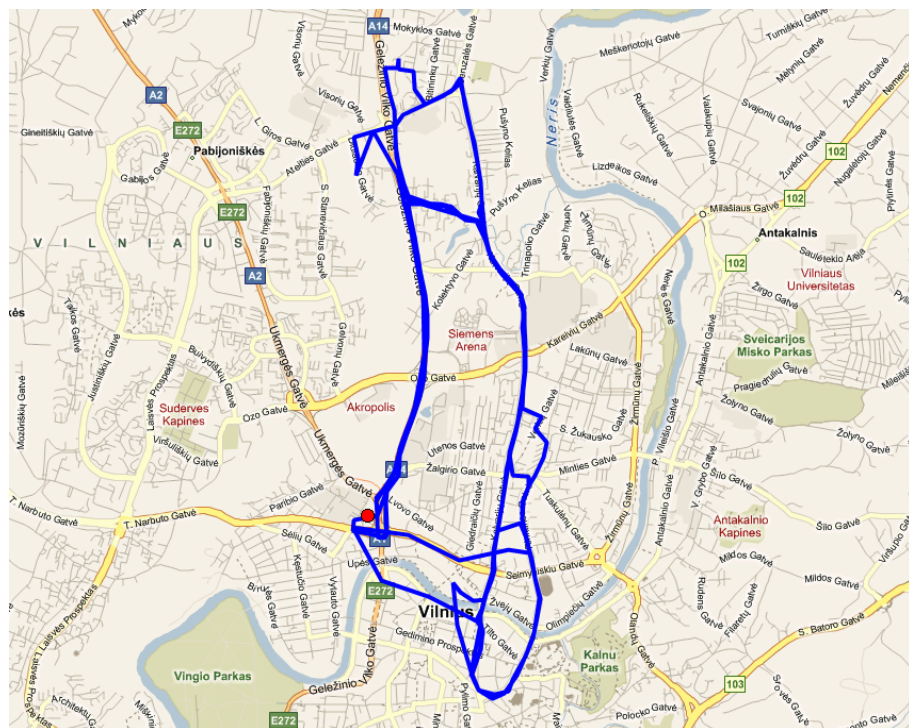
Pic. 10. Track of the FM5500 working in "City scenario"

The track showed in the screenshot above contains the information of 3 days driving of real vehicle in the city of Vilnius, Lithuania. Using the service of local GSM service provider "Bite GSM" 1 MB of data has been transmitted through the GPRS to generate such track.

⚠️ **NOTE**, that GPRS traffic differs from the GPRS coverage at the area and the GSM service provider's data averaging policy, so the GPRS traffic can be higher than the described in the example above.